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19/Eng 02 10 Pg  
maths

19/Eng 02/019

Assignment

A (6, -5)

B (-2, 1)

C (0, 3)

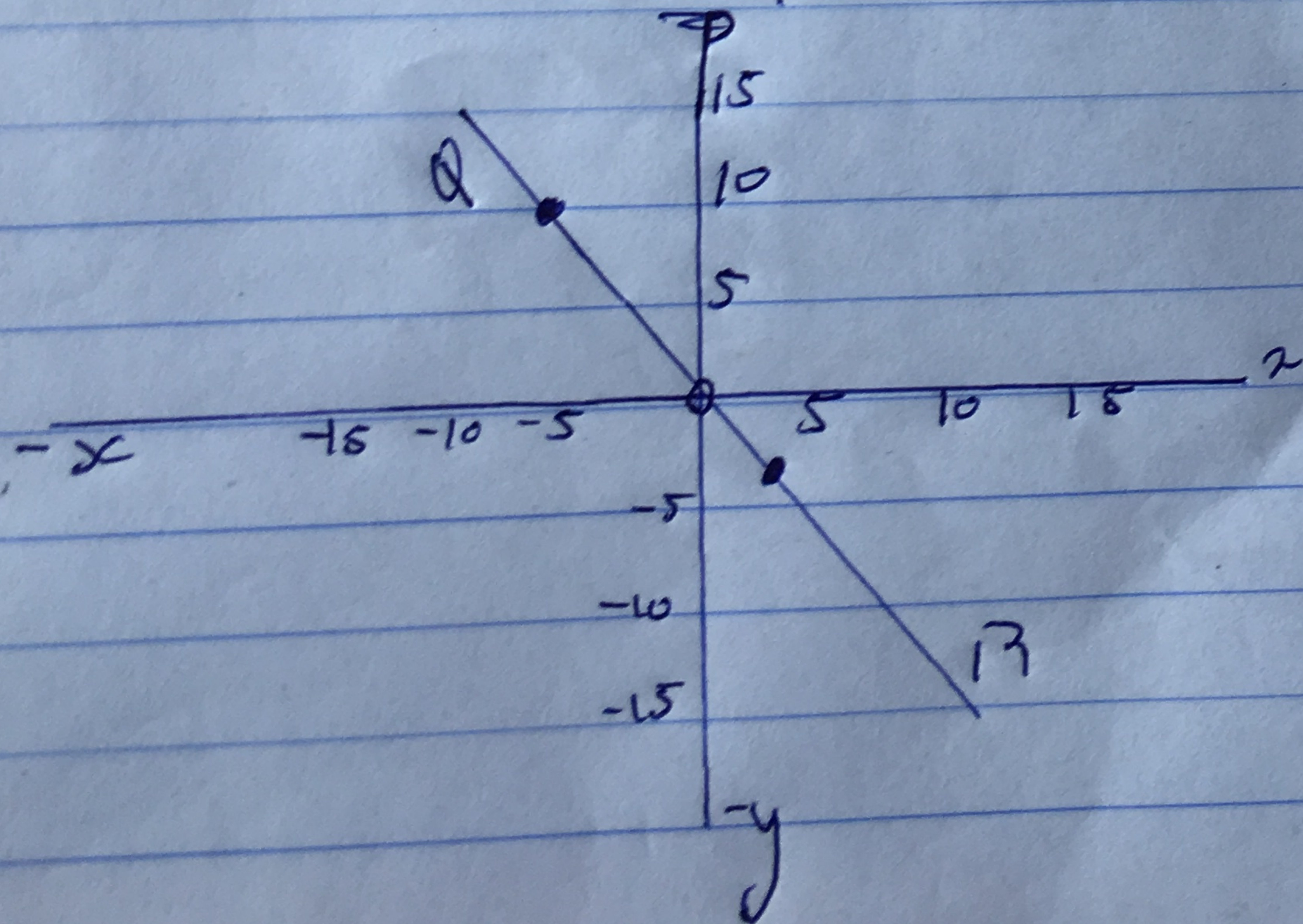
$$\begin{aligned} AB &= \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2} \\ &= \sqrt{(-2 - 6)^2 + (1 + 5)^2} \\ &= \sqrt{(-8)^2 + (6)^2} \\ &= \sqrt{64 + 36} \\ &= \sqrt{100} \end{aligned}$$

= 10

$$\begin{aligned} \overline{AC} &= \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2} \\ &= \sqrt{(0 + 6)^2 + (3 + 5)^2} \\ &= \sqrt{(6)^2 + (8)^2} \\ &= \sqrt{36 + 64} \\ &= \sqrt{100} \\ &= 10 \end{aligned}$$

$$\begin{aligned} \overline{BC} &= \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2} \\ &= \sqrt{(0 + 2)^2 + (3 - 1)^2} \\ &= \sqrt{8} \end{aligned}$$

= 2.83



a) P divides QR internally

$$(x_1, y_1) = (4, 9)$$

$$(x_2, y_2) = (14, -15)$$

$$(x, y) = (5, -3)$$

$$x = \frac{Lx_1 + Kx_2}{L+K}$$

$$L+K$$

$$5(4) = \frac{4L + 14K}{L+K}$$

$$L+K$$

$$5(L+K) = -4L + 14K$$

$$5L + 5K = -4L + 14K$$

$$5L + 4L = 14K - 5K$$

$$9L = 9K$$

$$L = K$$

$$1:1 = K:L$$

B) R divides PQ externally

$$(x_1, y_1) = (5, -3)$$

$$(x_2, y_2) = (4, 9)$$

$$(x, y) = (14, -15)$$

$$y = \frac{Ly_1 - Ky_2}{L-K}$$

$$L-K$$

$$-15 = \frac{-3L - 9K}{L-K}$$

$$L-K$$

$$-15(L-K) = -3L - 9K$$

Divide both sides by 3

$$5(L-K) = L + 3K$$

$$5L - 5K = L + 3K$$

$$5L - L = 3K + 5K$$

$$4L = 8K$$

$$L = 2K$$

$$2:1 = K:L$$